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A RESOURCE ENGINEERING COMPANY
696 VIRGINIA ROAD, CONCORD, MA 01742, (617) 369-8910

environmental and engineering excellence

ERT Document No. 3140-001-005
ERT Reference No. 52-LMH-004

March 22, 1988

Ms. Barbara Newman
Region I
U.S. Environmental Protection Agency
J.F.K. Federal Building
Boston, Massachusetts 02203

RE: UniFirst Corporation, Woburn, Massachusetts

Dear Barbara:

Please find enclosed the results for the EPA SW846 Method 8240 analysis performed on the cuttings from UC-22 and shallow bedrock wells (UC15 through UC20). These cuttings have been contained in a sealed roll-off container at the former UniFirst plant in Woburn.

As outlined in our report titled "Summary of Investigation, UniFirst Site, Woburn, Massachusetts" of February 1988, the cuttings from UC15 through UC20 were analyzed upon completion of the shallow bedrock wells. These cuttings contained no detectable concentrations of hazardous substance list volatile organic compounds. The water contained with the cuttings did contain 50 micrograms per liter methylene chloride and 3.8 micrograms per liter benzene (see pg. 2-4 of the report, mid page). The full laboratory report on those samples is contained in Appendix B of the report.

The laboratory data contained herein indicate that no hazardous substance list volatile organic compounds were contained in the cuttings from UC-22. The cuttings from UC-22 were collected in the manner described on pg. 2 of Jeff Lawson's letter of January 7, 1988.

The roll-off container was dewatered by successively pumping off the water into Franklin Pumping Service tanker trucks that were used to transport the discharge water from UC22 during the deeper bedrock aquifer test. The water was manifested and transported to the CECOS facility in Bristol, Connecticut for treatment.

As stated on pg. 2-4 of the February 1988 report, following the dewatering procedure the cuttings were spread as common fill on the eastern ramp leading up to UC-9 and UC-22. If there are any questions of comments regarding these data please feel free to call 369-8910 or write the letterhead address.

Very truly yours,

Lawrence M. Hogan

Lawrence M. Hogan
Geologist

LMH/djs/JTL

enclosure

cc: Jeffrey C. Bates, Esquire, (Goodwin, Proctor & Hoar)
Jeffrey T. Lawson, (ERT)

ERT

ANALYSIS OF 1 SOIL SAMPLE
FROM
UNIFIRST
WOBURN, MA

ERT PROJECT NO. 0005-530
March 16, 1988

PREPARED FOR

J. LAWSON

ERT, CONCORD, MA

Prepared by
Analytical Chemistry Laboratory
ERT, A Resource Engineering Company
33 Industrial Way, Wilmington, Massachusetts 01887

33 Industrial Way
Wilmington, MA 01887
(617) 657-4290

From: LABORATORY MANAGER

Date of Issuance: 03/16/88

Subject: SAMPLE RETENTION TERMS

Client: UNIFIRST, WOBURN

Date Sample Received: 02/25/88

Number of Samples Received/Matrix: 1 Soil

It is the policy of ERT to dispose of unanalyzed portions of samples thirty (30) days following submittal of the pertinent final analytical results report. This letter serves as notification that the above sample will be due for disposal.

Sample extracts for organic analyses will be archived for one (1) year. Separate notification will be sent to you prior to disposal of sample extracts.

A. ERT will return to you all unused samples at your expense (Federal Express), or

B. ERT will maintain custody of the samples at a cost of fifteen dollars ($15.00) per sample per quarter for refrigerated storage, and three dollars ($3.00) per sample per quarter for ambient storage. You will be billed in advance each quarter based upon the number of samples in storage at the beginning of the quarter. The minimum storage fee per project will be fifty dollars ($50.00) per quarter to cover administrative costs.

YOU MUST RETURN THIS LETTER TO THE LABORATORY MANAGER WITH PROPER AUTHORIZATION (i.e., Purchase Order Number, Federal Express Number, etc), SAMPLE OPTION, SIGNATURE AND DATE WITHIN THIRTY (30) DAYS OF ISSUANCE OR THE SAMPLES INDICATED ABOVE WILL BE DISPOSED.

OPTION: _____

AUTHORIZATION NO.: _____ (FederalExpress _____ (Purchase Order)

SIGNATURE: _____

DATE: _____

ANALYSIS OF SAMPLE
FROM
UNIFIRST, WOBURN

INTRODUCTION

This report represents the results of analyses conducted on 1 soil sample received by the ERT Analytical Chemistry Laboratory on February 25, 1988. The sample was to be analyzed for Volatiles (624).

SAMPLE RECEIPT AND CHAIN OF CUSTODY

Routine inspection of the sample revealed it to be packaged properly and received in good condition.

Upon receipt, information from the submitted sample was recorded in the Master Log Book (and the LIMS computer system) and assigned ERT Control Numbers. These unique sample labels were affixed to respective sample containers and subsequently utilized throughout the laboratory analysis procedures for positive traceability.

ANALYTICAL PROCEDURES

The soil sample was analyzed according to procedures as outlined in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 2nd Edition, revised April, 1984.

QUALITY CONTROL PROCEDURES

Standard quality control procedures were implemented for analyses. Laboratory reagent (method) blanks, laboratory duplicated samples, and laboratory fortified control samples were analyzed concurrently with each case of submitted samples. The laboratory normally prepares and analyzes one (1) blank, one (1) fortified sample, and one (1) duplicate sample for each case of samples received or for each twenty (20) samples, whichever is more frequent. A case consists of a finite, usually predetermined number of samples collected over a given time period from one particular site. Duplicate sample analyses are performed only when sufficient sample volume is received. The results of the analyses are reviewed by the laboratory quality control coordinator to insure compliance with established analytical control limits.

Laboratory prepared method blank samples and fortified samples are identified in the analytical result tables under the Field Identification number using a unique numbering system and also assigning one ERT sample number to each sample. The Prefix "MB" refers to Method Blank, and "LF" refers to Laboratory Fortification (i.e., a quality control recovery sample).

RESULTS OF ANALYSIS

Analytical results for the submitted sample are presented in the appended tables. Summary tables for the results of blank, and fortified control samples have also been provided in the Appendix.

DISCUSSION

Review of the results of the quality control/quality assurance samples analyzed concurrently with the submitted sample indicated that the analyses were within the acceptance criteria as established by the U.S. EPA.

DATA AND REPORT APPROVAL FORM

SUBMITTED BY:

Analytical Chemistry Laboratory
ERT A Resource Engineering Company
33 Industrial Way
Wilmington, MA 01887
March 16, 1988

DATA AUDITED BY:

M. S. Sparlin

M. S. Sparlin
Quality Control Coordinator

REPORT APPROVED BY:

A. P. Paradice

A. P. Paradice
Laboratory Manager

VOLATILE (624) ANALYSES IN SOIL
SUMMARY OF ANALYTICAL RESULTS
METHOD BLANK RESULTS
QUALITY CONTROL CHECK SAMPLE RESULTS

VOLATILE ORGANICS

Surrogate Recovery Summary

Client Name: Unifirst, Woburn Project No: 0005-530

Matrix: Solid

Authorized: 02/26/88 **Received:** 02/26/88

ERT ID	Client ID	Surrogate Compound (%)		
		d_4-1,2,-Dichloroethane	d_8-Toluene	p-Bromofluorobenzene
6873-01	53083 /UC-22	99	100	102
QC Advisory Limits:		70-121%	61-117%	74-121%

Reported by Wm Donati Approved by CB

VOLATILE ORGANICS

Surrogate Recovery Summary

Client Name: Unifirst, Woburn Project No: 0005-530

Matrix: Aqueous

Authorized: 02/26/88 Received: 02/26/88

ERT ID	Client ID	Surrogate Compound (%)		
		d_4-1,2,-Dichloroethane	d_8-Toluene	p-Bromofluorobenzene
4685B	ERT Procedural Blank - Methanol	100	102	99
QC Advisory Limits:		76-114%	61-110%	74-115%

Reported by Wm Donati Approved by

HAZARDOUS SUBSTANCE LIST (HSL) VOLATILE ORGANICS

EPA Method 8240/HSL List

Client Name: Unifirst, Woburn Project No: 0005-530

ERT **ID:** 53083/UC-22 — Rolloff Cuttings

Client **ID:** 6873-01

Matrix: Solid Sampled: 02/25/88 Received: 02/26/88

Authorized: 02/26/88 Prepared: 02/29/88 Analyzed: 03/01/88

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	µg/kg (dry wt)	150
Bromomethane	ND	µg/kg (dry wt)	150
Vinyl chloride	ND	µg/kg (dry wt)	150
Chloroethane	ND	µg/kg (dry wt)	150
Methylene chloride	ND	µg/kg (dry wt)	150
Acetone	ND	µg/kg (dry wt)	1,500
Carbon disulfide	ND	µg/kg (dry wt)	60
1,1-Dichloroethene	ND	µg/kg (dry wt)	60
1,1-Dichloroethane	ND	µg/kg (dry wt)	60
trans-1,2-Dichloroethene	ND	µg/kg (dry wt)	60
Chloroform	ND	µg/kg (dry wt)	60
1,2-Dichloroethane	ND	µg/kg (dry wt)	60
2-Butanone	ND	µg/kg (dry wt)	300
1,1,1-Trichloroethane	ND	µg/kg (dry wt)	60
Carbon tetrachloride	ND	µg/kg (dry wt)	60
Vinyl acetate	ND	µg/kg (dry wt)	300
Bromodichloromethane	ND	µg/kg (dry wt)	60
1,2-Dichloropropane	ND	µg/kg (dry wt)	60
trans-1,3-Dichloropropene	ND	µg/kg (dry wt)	60
Trichloroethene	ND	µg/kg (dry wt)	60
Dibromochloromethane	ND	µg/kg (dry wt)	60
1,1,2-Trichloroethane	ND	µg/kg (dry wt)	60
Benzene	ND	µg/kg (dry wt)	60
cis-1,3-Dichloropropene	ND	µg/kg (dry wt)	60
2-Chloroethyl vinyl ether	ND	µg/kg (dry wt)	300
Bromoform	ND	µg/kg (dry wt)	60
4-Methyl-2-pentanone	ND	µg/kg (dry wt)	300
2-Hexanone	ND	µg/kg (dry wt)	300
1,1,2,2-Tetrachloroethane	ND	µg/kg (dry wt)	60
Tetrachloroethene	ND	µg/kg (dry wt)	60
Toluene	ND	µg/kg (dry wt)	60
Chlorobenzene	ND	µg/kg (dry wt)	60
Ethylbenzene	ND	µg/kg (dry wt)	60
Styrene	ND	µg/kg (dry wt)	60
Total xylenes	ND	µg/kg (dry wt)	60

Solid content = 86%

ND = Not detected.

Reported by W. Donati Approved by QB

HAZARDOUS SUBSTANCE LIST (HSL) VOLATILE ORGANICS

EPA Method 624/HSL List

Client Name: Unifirst, Woburn **Project No:** 0005-530

ERT ID: ERT Procedural Blank - Methanol

Client ID: 4685B

Matrix: Aqueous **Sampled:** NA **Received:** NA

Authorized: NA **Prepared:** 02/29/88 **Analyzed:** 02/29/88

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	µg/L	130
Bromomethane	ND	µg/L	130
Vinyl chloride	ND	µg/L	130
Chloroethane	ND	µg/L	130
Methylene chloride	ND	µg/L	130
Acetone	ND	µg/L	1,300
Carbon disulfide	ND	µg/L	50
1,1-Dichloroethene	ND	µg/L	50
1,1-Dichloroethane	ND	µg/L	50
trans-1,2-Dichloroethene	ND	µg/L	50
Chloroform	ND	µg/L	50
1,2-Dichloroethane	ND	µg/L	50
2-Butanone	ND	µg/L	250
1,1,1-Trichloroethane	ND	µg/L	50
Carbon tetrachloride	ND	µg/L	50
Vinyl acetate	ND	µg/L	250
Bromodichloromethane	ND	µg/L	50
1,2-Dichloropropane	ND	µg/L	50
trans-1,3-Dichloropropene	ND	µg/L	50
Trichloroethene	ND	µg/L	50
Dibromochloromethane	ND	µg/L	50
1,1,2-Trichloroethane	ND	µg/L	50
Benzene	ND	µg/L	50
cis-1,3-Dichloropropene	ND	µg/L	50
2-Chloroethyl vinyl ether	ND	µg/L	250
Bromoform	ND	µg/L	50
4-Methyl-2-pentanone	ND	µg/L	250
2-Hexanone	ND	µg/L	250
1,1,2,2-Tetrachloroethane	ND	µg/L	50
Tetrachloroethene	ND	µg/L	50
Toluene	ND	µg/L	50
Chlorobenzene	ND	µg/L	50
Ethyl benzene	ND	µg/L	50
Styrene	ND	µg/L	50
Total xylenes	ND	µg/L	50

NA = Not applicable.

ND = Not detected.

Reported by Wm Donati Approved by

PRIORITY POLLUTANT VOLATILE ORGANICS

EPA Method 624 + 624/HSL List

QUALITY CONTROL

Client Name: Unifirst, Woburn Project No: 0005-530

ERT ID: Laboratory Control Spike

Client ID: 4686LCS

Matrix: Aqueous Prepared: 02/29/88 Analyzed: 02/29/88

Parameter	% Recovery	QC Advisory Limits
1,1-Dichloroethene	73	61 - 145%
Trichloroethene	79	71 - 120%
Benzene	90	76 - 127%
Toluene	89	76 - 125%
Chlorobenzene	88	75 - 130%

Reported by WmDonati Approved by

PRIORITY POLLUTANT VOLATILE ORGANICS

EPA Method 624 + 624/HSL List

QUALITY CONTROL

Client Name: Unifirst, Woburn Project No: 0005-530

ERT ID: Laboratory Control Spike Dup.

Client ID: 4703LCSD

Matrix: Aqueous Prepared: 03/01/88 Analyzed: 03/01/88

Parameter	% Recovery	QC Advisory Limits
1,1-Dichloroethene	67	61 - 145%
Trichloroethene	81	71 - 120%
Benzene	105	76 - 127%
Toluene	94	76 - 125%
Chlorobenzene	93	75 - 130%

Reported by _____ Approved by _____

CHAIN-OF-CUSTODY RECORD

UNIFIRST

WOBURN, MA

0005-550

RT

SAMPLE RECEIPT CHECK LIST

nt: UNIFIRST-2-25-88

C Record #(s):

Matrix	Container	ERT #(s)
AND/SOIL	3 VOA VIAL	53083

Were samples shipped or hand-delivered?

Notes: LARRY HOGAN

Was COC record present upon receipt of samples? Yes ☑ No ☐

Notes:

Was COC tape present/unbroken on outer package? Yes ☐ No ☑

Notes:

Were samples received ambient or chilled?

Notes:

Were any samples received broken/leaking (improperly sealed? Yes ☐ No ☑

Notes:

Were samples properly preserved? Yes ☑ No ☐

Notes:

Were COC types present/unbroken on samples? Yes ☑ No ☐

Notes:

Any discrepancies between sample labels and COC records? Yes ☐ No ☑

Notes:

Were samples received within holding times? Yes ☑ No ☐

Notes:

dditional Comments: STORED IN: B8 (ENSECO)

amples inspected and logged in by Scott Gerade Date: 2-25-88

0005-330

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location
UNIFIRST	Woburn MA
Project No.	**Field Logbook No.**
D495-005	
Sampler: (Signature)	**Chain of Custody Tape No.**
[signature]	

Sample No./ Identification	Date	Time	* Lab Sample Number	Type of Sample	ANALYSES 624	REMARKS
UC-22 Roll-off cuttings	2/25/88	1130	ERT # 53083	SAND/SOIL	V	3-VOA VIAL
						1 WK TURN-AROUND

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	2/25/88	1340			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received for Laboratory: (Signature)	Date	Time
			Scott Berado	2-25-88	1340
Sample Disposal Method:			Disposed of by: (Signature)	Date	Time

SAMPLE COLLECTOR	ANALYTICAL LABORATORY	
	Environmental Research and Technology, Inc. 33 Industrial Way Wilmington, MA 01887 617-657-4290	ERT Nº 21194

1974-3-84